PERSONAL

Retirement

Professor Masakazu Matsui

(Interface Science, Division of Separation Chemistry)

On the 31st of March, 1999, Dr. Masakazu Matsui retired from Kyoto University after 38 years of service to the University and was honored with the title of Professor Emeritus of Kyoto University.

Dr. Matsui was born in Hyogo on the 13th of July, 1935. After graduation from Faculty of Science, Kyoto University in 1959, he continued his studies on the synthesis and application of α-dioximes for metal analysis as a graduate student. In 1961, he was appointed an instructor of the Laboratory of Radiochemistry, Institute for Chemical Research, Kyoto University, under the supervision of the Emeritus Professor Tsunenobu Shigematsu. He was granted a doctoral degree from Kyoto University in 1966 for his studies on coprecipitation mechanism with calcium oxalate. On a leave of absence in the year 1969 to 1970, he worked on the ion-selective electrode in cooperation with Professor H. Freiser at Arizona University. In 1972, Dr. Matsui was promoted to Associate Professor at the Laboratory of Radiochemistry, Institute for Chemical Research, Kyoto University. In 1982, he was appointed full Professor of Kyoto University and directed the Laboratory of Radiochemistry (present name, Interface Science III), Institute for Chemical Research. At the Graduate School of Science, Kyoto University, he gave lectures on Radiochemistry, Analytical Chemistry and Geochemistry, and supervised the dissertation works of many graduate student. His sincere and warmhearted character has been admired by his friends, colleagues and students.

Dr. Matsui devoted himself to the Japan Society for Analytical Chemistry, and officiated as Vice-President of the Society between 1994-1995. He was a member of the interdisciplinary committee of world cultural council, and the trustee of Japan Society of Solvent Extraction Chemistry and others. He has also chaired the International Symposium on New Sensors and Methods for Environmental Characterization.

During the past 37 years, his research interest encompassed a wide array of radiochemistry, separation chemistry, inorganic chemistry, molecular recognition, environmental chemistry and geochemistry. His contribution to the Institute through both academic and administrative activities is hereby gratefully acknowledged, and his academic achievements are briefly described below.

Dr. Matsui's work has been concerned with selective complex formation systems based on the concept of molecular recognition, and the separation chemistry in the selective metal chelate system employing the new ligands. He designed and synthesized a new series of ligands (host molecules), in particular, β-diketone, acylpyrazolone and polypyrazolylborate derivatives that have novel functions with improved stability and separability of metal ions and guest molecules. His research interest in molecular recognition was highlighted by the X-ray crystallography of metal chelate complexes. He extensively investigated various mechanisms of ion size discrimination derived from structures of the ligand and complexes, such as bite size, rigidity and interligand contact. As a geochemical aspect of his research, he established novel analytical methods for trace elements in the hydrosphere and studied their applications. He also elucidated circulation and biochemistry of minor and trace elements in the open ocean and Lake Biwa. Owing to his brilliant achievements, he was awarded a prize from Japan Society for Analytical Chemistry in 1995.

Thus, Dr. Matsui has shown us an ideal direction of the academic research that the successful application can be attained only by a thorough understanding of the fundamental phenomena. This principle will remain as a firm basis underlying the research work in the Institute.

Retirement

Professor Atsuyoshi OHNO

(Bioorganic Chemistry,
Division of Bioorganic Reaction Theory)

On the 31st of March, 1999, Dr. Atsuyoshi Ohno retired form Kyoto University after 26 years of service to the University and was honored with the title of Professor Emeritus of Kyoto University.

Dr. Ohno was born in Hiroshima on the 13th of February, 1936. After graduation from Department of Chemistry, Faculty of Science, Kyoto University in 1958, he continued his studies as a graduate student. In 1960, he was appointed a technical officer of the Radiation Center of Osaka Prefecture, under the supervision of the Professor Shigeru Oae. He was granted a doctoral degree from Osaka City University in 1963 for his studies on the neighboring participation of sulfur to carbaion stabilization. In 1963, he stayed at the Department of Chemistry, Massatusetts Institute of Technology and studied reaction mechanism of S_N2 type hydrolysis with Professor C. G. Swain. In 1965, he moved to the Department of Chemistry, Purdue University and studied kinetic and theoretical studies of carbanion chemistry with Professor R. E. Davis. In 1966, Dr. Ohno was promoted to Research Fellow at Sagami Chemical Research Center. In 1969, he was promoted to the chief researcher of the same center. In 1974, Dr. Ohno was promoted to Associate Professor of Institute for Chemical Research, Kyoto University. In 1989, he was appointed full Professor of Kyoto University and directed the Laboratory of Bioorganic Chemistry.

During the past 40 years, his research interest encompassed a wide array of physical organic chemistry, bioorganic chemistry, and synthetic organic chemistry. Following his early studies on the mechanism of sulfur-stabilized carbanion, he developed a series of basic organic reaction mechanism. His idea of assistance of 3d-orbital of sulfur on stabilization of carbanion prompted numerous organic chemists to use the sulfur stabilized carbanion in synthetic organic chemistry. He synthesized a series of model compounds of NADH, and carried out the stereoselective reduction of ketones with high enantioselectivity. He proposed a novel mechanism of the reaction with nicotinamide cofactor, namely, in the reaction of transfer of (net) hydride, electron transfer proceeds prior to hydrogen transfer and multi-step electron proton-electron transfer was observed in the model reaction. His proposal raised a big controversy among organic chemists and biochemists during two decades and finally, multi-step mechanism was supported as the standard mechanism.

He synthesized a chiral 5-deazaflavin model and several NADH models which had axial chiralities and he found conversion of a central chirality into an axial chirality (chirality sink) or vice versa in the oxidation or reduction of these model compounds.

He used bakers' yeast as a biocatalyst to reduce various ketones into the corresponding chiral alcohols in high enantioselectivities. He found a new system for artificial control of the stereoselectivity of microbial reductions.

He served as editors of Bulletin of the Chemical Society of Japan, Chemistry Letters, Reviews on Heteroatom Chemistry, and Heteroatom Chemistry.

He gave lectures on advanced bioorganic chemistry at the graduate school of science at Kyoto University and supervised dissertation works of graduate students. His sincere and warmhearted character has been admired by his friends, colleagues, and students.